



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|------------------------------|---------------------|------------------|
| 09/542,091 | 04/03/2000 | Jose De La Torre-Bueno PH.D. | 10225-023001 | 4964 |

7590 12/11/2001

Kent J Sieffert
Fish & Ricahrdson PC PA
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402

EXAMINER

MILLER, MARTIN E

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 12/11/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/542,091

Applicant(s)

TORRE-BUENO PH.D., JOSE DE LA

Examiner

Martin Miller

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 27 September 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-20 and 23-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-20 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendments and Arguments

1. Applicant's amendments and arguments filed September 27, 2001 have been made of record. Claims 21 and 22 have been canceled. Claims 1, 3, 6, 10, 11, 15, 23, 26, and 27 have been amended accordingly.
2. The clean copy of amended claim 1 has the bracketed word "[displayed]" in the clean version. This is incorrect and it should be deleted.
3. Applicant's arguments regarding the combination of Wood and Bamberger not teaching that the region of interest is operated upon by an image processor at the first location is persuasive; therefore, the Examiner withdraws his 35 U.S.C. §103(a) of claims 1-20 and 23-30.

Claim Rejections - 35 USC § 112

4. Claims 1 and 10 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In response to the examiner's 35 U.S.C. §112 rejection of claim 1, the applicant states that the remote user's computer decompresses the transmitted compressed image for viewing. However, the claim now states that the user selects a region of the compressed image. The applicant has not pointed to any portion of the specification that supports such claim and the examiner could find no support for the claimed limitation in the specification. Also, if there is support in the specification, the examiner could not find written description that would enable one of ordinary skill to implement the limitation of selecting a region of a compressed image to be sent back to an image server for image analysis.

As per claim 10, it recites a similar limitation of "selecting a region of the compressed image" and the above remarks also apply.

The Examiner is giving the claim limitation the interpretation of the previous office action, which is also presented in applicant's arguments and amendment to the paragraph on page 4 of the specification. That interpretation being that the user selects a region on a decompressed image and information regarding that region is transmitted to the image server.

Claim 24 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 depends upon canceled claim 22. Due to claim 22 cancellation claim 24 is rendered indefinite.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1-4, 6-11, 13-17, 19, 20, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al. (Wood), US 5851186 and Sivan et al., US 6281874 B1 (hereinafter Sivan).

As per claim 1, Wood teaches:

generating a compressed medical image from a source medical image (col. 5, lines 34-35, and col. 10, lines 8-12) at a first location (figure 1, elements 10, 12) ;

transmitting the compressed (JPEG , col. 10, ll. 8-12) medical image to a remote view station at a second location for display (figure 1, element 102, col. 3, ll.20-32);

Wood teaches that he can select a region of interest (col. 10, lines 35-40), but it is only to be cut from the image and pasted into a report document. Wood does not teach selecting a region of interest and transmitting to a remote user only the region selected. However, Sivan teaches:

selecting a region of the displayed medical image (col. 4, ll.41-43); and applying image analysis operations (zooming) to a region of the source medical image corresponding to the selected region of the compressed medical image (col. 4, ll.33-36).

It would have been obvious to one of ordinary skill in the art to utilize the diagnosis image enhancement features of Sivan in the system of Wood to better assist a physician who is viewing an image remotely to enhance the image in a way that personally allows that physician to make a more informed diagnosis. By enhancing the imagery via zooming or other enhancements, allows the more powerful computer of the web server to quickly perform image processing to the high-resolution image and send the information back to the client or remote user.

As per claim 2, Wood teaches:

transmitting the compressed (col. 10, l. 10) medical image over a global packet switched network (col. 4, l. 11).

As per claim 3, Sivan teaches:

transmitting region separate from the compressed medical image from the remote view station to a image server, wherein the region information defines the selected regions of the displayed medical image. (col. 4, ll. 52-60).

As per claim 4, Sivan teaches:

the region information is a series of pixels (col. 4, ll. 45-50).

As per claim 6, Wood teaches:

receiving a diagnosis at a first location from the remote view station and associating the diagnosis with the source medical image in a database (col. 10, ll.15-21) at the first location.

As per claim 7, Sivan teaches:

wherein selecting the compressed medical image includes receiving input from a pointing device controlled by a user to outline the region of the compressed medical image (col. 3, ll. 5-8).

As per claim 8, Wood teaches:

generating a compressed medical image includes applying a compression algorithm that reduces data losses that are detectable with human vision. (col. 10, ll. 5-12). Sivan also teaches JPEG compression (col. 7, ll. 55-61 and col. 8, ll. 3-13).

As per claim 9, Wood teaches:

applying JPEG compression algorithm (col. 10, l. 10). Sivan also teaches JPEG compression (col. 7, ll. 55-61 and col. 8, ll. 3-13).

As per claim 10, it recites substantially the same limitations as claim 1 above and analogous remarks apply except for the following limitation, which is taught by Sivan:

the remote viewing station includes an input device for selecting a region of the compressed medical image. (col. 3, ll. 5-8).

As per claim 11, it recites the same limitations as claim 4 above and analogous remarks apply.

As per claim 13, it recites the same limitations as claim 6 above and analogous remarks apply.

As per claim 14, it recites the same limitations as claim 7 above and analogous remarks apply.

As per claim 15, it recites substantially the same limitations as claim 1 above and analogous remarks apply.

As per claim 16, it recites the same limitations as claim 2 above and analogous remarks apply.

As per claim 17, it recites the same limitations as claim 4 above and analogous remarks apply.

As per claim 19, it recites the same limitations as claim 6 above and analogous remarks apply.

As per claim 20, it recites the same limitations as claim 8 above and analogous remarks apply.

As per claim 27, Wood teaches:

transmitting a medical image from a first location (figure 1, element 12) to a remote view station at a second location for display (figure 1, element 108); But Wood does not specifically teach the following limitations, however Sivan teaches:

receiving at the first location (server) region information separate from the compressed image from the remote view station (client) at the first location, wherein the region information defines a region of the displayed medical image (col. 4, ll. 52-60);

locally applying an image processing operation at the image server to a region of the source medical image as a function of the region information ("selected for zooming", col. 4, ll. 41-43).

Art Unit: 2623

It would have been obvious to one of ordinary skill in the art to utilize the diagnosis image enhancement features of Sivan in the system of Wood to better assist a physician who is viewing an image remotely to enhance the image in a way that personally allows that physician to make a more informed diagnosis. By enhancing the imagery via zooming or other enhancements, allows the more powerful computer of the web server to quickly perform image processing to the high-resolution image and send the information back to the client or remote user.

As per claim 28, it recites substantially the same limitation as claim 2 above and analogous remarks apply.

As per claim 29, it recites substantially the same limitation as claim 4 above and analogous remarks apply.

As per claim 30, Wood teaches:

transmitting includes compressing the medical image (col. 10, ll. 8-12).

7. Claims 23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood and Sivan, as applied to claims 1, 10, and 15 above, and further in view of Wallace, The JPEG Still Picture Compression Standard, IEEE Transactions on Consumer Electronics, vol. 38, no. 1, February 1992.

As per claim 23, Wood teaches:

compressing a source medical image at a first compression level (J PEG, col. 10, 1.10);

transmitting the compressed medical image to a remote view station at a second location for display (figure 1, element 102);

Art Unit: 2623

But Wood does not specifically teach sending separate information, but Sivan teaches: receiving at a first location region information separate from the compressed medical image (col. 4, ll. 52-60) from the remote view station, wherein the region information defines a region of the compressed medical image (col. 3, ll. 5-8);

But neither Wood nor Sivan specifically teaches the following limitation of using a second compression level. However, Wallace teaches:

compressing a region of the source medical image at a second compression level at the first location as a function of the region information, wherein the second compression level results in less information loss than the first compression level (p. xxiii, Section 4.5 Compression and Picture Quality). In section 4.5, Wallace teaches that the JPEG standard has multiple levels of compression that produce various results including picture quality. It would have been obvious to one of ordinary skill in the art to utilize the teachings of Wallace to use the JPEG compression standard levels of compression in the system of Wood and Sivan to produce the most efficient compression level while achieving the best picture quality at the remote users viewing station.

As per claims 25, and 26, the recite substantially the same limitations as claims 4, and 6, as taught by Sivan and Wood, respectively, and analogous remarks apply.

8. Claims 5, 12, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood and Sivan as applied to claims 1, 10, and 15 above, and further in view of Nishikawa et al., (Nishikawa), US 6058322.

As per claim 5, Wood teaches providing images, reports and information (col. 12, ll. 15-32). These reports could obviously have some type of numeric ranking. However, neither Wood nor Sivan specifically teaches that a score is output. Nishikawa teaches: image analysis operations includes outputting a score and communicating the score to the remote view station for display (abstract, col. 31, ll. 5-15, and col. 33, ll. 312).

It would have been obvious to one of ordinary skill in the art to incorporate the automatic diagnosis features of Nishikawa into the system of Wood and Sivan in order to assist diagnosis and reduce diagnostic errors due to lack of experience, or discontinued review after a single definite finding instead of completely reviewing the image data. By providing the user with a rank of all the possible threatening features in a medical image the user can make a more informed decision.

As per claims 12 and 18, they recite the same limitations as claim 5 above and analogous remarks apply.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 2623

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

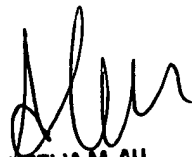
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Miller whose telephone number is (703) 306-9134. The examiner can normally be reached on Monday-Friday, Maxi-flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

mem
mem

December 4, 2001


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600